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and Merced counties northward. Through lack of material for properly working out the problem I have provisionally adopted the latter course."

Since he has 175 specimens that he regarded as typical *longicauda*, and 157 that he referred to subspecies *pallidus*, or 332 in all, and since these 332 specimens came from no less than 70 localities scattered over the single State of California, it is a little difficult to understand what he meant by 'lack of material for properly working out the problem.' Furthermore, an examination of the localities assigned to the two alleged forms shows them to be hopelessly mixed—both being recorded from the San Joaquin Valley, and both from the coast region north of Monterey!

One of the largest and most highly colored members of the group is a new form from Louisiana, collected by the field naturalists of the Department of Agriculture. It is a northern representative of *R. mexicanus* and is named, from its color, *R. mexicanus aurantius*.

The paper as a whole is a critical and painstaking study of an obscure group. It is based in the main on ample material and is particularly welcome as adding another genus to those recently revised by American mammalogists.

C. H. M.

#### NOTES AND NEWS.

##### THE REMEDY FOR PEAR BLIGHT.

THE writer desires to announce that a satisfactory method of preventing pear blight has been discovered. After prolonged investigation the complete life history of the microbe (*Bacillus Amylovorus*) has been worked out. Most of the cases of blight either come to a definite termination in summer or else kill the tree. When this is the case the blight dies out completely, there being no source of supply for the germs the following spring. In certain cases where it is a sort of even battle between the host and

parasite, or where late infections in the fall have not run their course before cold weather comes on, the blight keeps alive in the tree. When root pressure increases in the spring, such cases start into activity and serve as sources of infection for the new growth. The removal of these sources of infection is the preventive remedy for pear blight. The work is best performed in autumn after all late growth has ceased, but while the foliage is still on the trees. At this season the dead leaves which persist on the blighted branches serve admirably to attract attention to the points of danger. The work can be done at any time during the winter up to the time of the beginning of growth in spring. Cutting out the blight in summer is unsatisfactory on account of the continued appearance of new infections. The matter will be published in full in a bulletin from the Division of Vegetable Pathology.

M. B. WAITE,

DEPARTMENT OF AGRICULTURE.

##### THE NEW YORK BOTANIC GARDEN.

THE sum of \$250,000 for the New York Botanic Garden has now been subscribed as follows:

J. P. Morgan.....	\$25,000
Columbia College.....	25,000
Andrew Carnegie.....	25,000
C. Vanderbilt.....	25,000
J. D. Rockefeller.....	25,000
D. O. Mills.....	25,000
Judge A. Brown.....	25,000
Wm. E. Dodge.....	10,000
Jas. A. Scrymser.....	10,000
Wm. C. Schermerhorn.....	10,000
Ex-Judge C. P. Daly.....	5,000
O. Ottendorfer.....	5,000
Samuel Sloan.....	5,000
George J. Gould.....	5,000
Miss H. M. Gould.....	5,000
John S. Kennedy.....	5,000
Wm. Rockefeller.....	5,000
Jas. M. Constable.....	5,000

Morris K. Jesup .....	\$2,500
Mrs. M. P. Dodge.....	1,000
Tiffany and Co.....	1,000
Hugh N. Camp.....	500

The act of incorporation required that this amount be collected for an endowment. The city must now raise \$500,000 by bonds for building purposes, and provide 250 acres of land in Bronx Park.

#### THE HELMHOLTZ MEMORIAL.

IN addition to the subscriptions to the Helmholtz Memorial acknowledged in the issue of SCIENCE of May 31, the sum of \$97 has been collected by Prof. Rood from officers of Columbia College and forwarded to the committee.

Ogden N. Rood.....	\$10
William Hallock.....	5
H. Cushman.....	5
R. Gordon.....	3
H. C. Parker.....	5
H. S. Curtis.....	2
Asa S. Iglehart.....	3
C. C. Trowbridge.....	1
H. T. Wade.....	1
J. H. Van Amringe.....	10
F. R. Hutton.....	5
F. B. Crocker.....	5
J. K. Rees.....	2
C. F. Chandler.....	10
H. C. Bowen.....	3
J. W. Burgess.....	5
R. Mayo-Smith.....	10
Wm. R. Ware.....	5
Thomas Price.....	2
H. T. Peck.....	2
Livingston Farrand.....	1
N. M. Butler.....	1
James H. Hyslop.....	1

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\$97

#### GENERAL.

THE thirty-fourth annual meeting of the National Educational Association of the United States will be held at Denver, Col-

orado, July 9th to 12th, 1895. The meeting promises to be the most important in the history of the Association. Among the large number of attractive addresses announced on the program are the address of the president, Professor Nicholas Murray Butler, on 'What Knowledge is of Most Worth,' and an address by Professor Joseph Le Conte on 'Effect of the Doctrine of Evolution upon Educational Theory and Practice.'

MR. ARCHIBALD, president of the trustees of Syracuse University, has offered to be one of six men to build a hall of science costing about \$150,000. The University has also been offered \$10,000 and \$100,000 towards a new medical college.

THE University of Chicago announces that an *American Journal of Sociology* will be issued bi-monthly from its press.

THERE are eleven candidates for the degree of Ph. D. at the University of Chicago—in Sociology and Geology each two, and in Philosophy, Greek, Latin, English History, Semetic and Chemistry each one.

MRS. L. P. BABBOTT, of Brooklyn, has endowed a fellowship for post-graduate study at Vassar College.

DURING the coming year lectures on experimental psychology will be given by Dr. Scripture to the entire Junior Class, 300 members, of Yale College. Fifty undergraduates have elected special courses in the laboratory.

COLORADO COLLEGE will hold the fourth annual session of its summer school of science, philosophy and languages from July 15th to August 16th. Among the lecturers from other universities are Prof. Bessey, of Kansas; Prof. Lounsbury, of Yale, and Prof. James, of Harvard.

PART of the collection of birds given to the Museum of Comparative Zoölogy of Harvard University by Mr. W. E. D. Scott was ex-

hibited on June 18th. About 350 of the 3,200 birds have been mounted in 56 cases. Each case contains two or more birds of the same species, mounted in such a way that the character and ordinary habits and surroundings of the species are suggested without making the accessories of more apparent importance than the birds themselves.

THE death is announced of Dr. Eliseyeff, known for his explorations in Asia and Africa.

A PRIZE of \$100 has been offered by a friend of Johns Hopkins University for the best essay by a student of the University upon the application of chemistry to the useful arts.

THE Ethical Seminary for graduates in Harvard University will be conducted by Professor G. T. Ladd, of Yale University, in the absence of Professor Palmer during the coming year.

ADDITIONAL courses of lectures will be given at Johns Hopkins University during the next academic year by Mr. G. K. Gilbert and Mr. Bailey Willis on geology, and by Dr. Frederick M. Warren, of Adelbert College on botany. The following appointments have also been made: Abraham Cohen, instructor in mathematics; Dr. Jacob H. Hollander, instructor in economics; Dr. Harry C. Jones, instructor in physical chemistry; Charles P. Singerfoos, an assistant in zoölogy and embryology.

DR. JOHN P. LOTZY has presented his herbarium of five thousand sheets to the Women's College of Baltimore.

THE death is announced of Heinrich Geisburg, an authority on Westphalian history and archæology, in his seventy-seventh year.

DR. THEOPHILUS A. WYLIE, Professor Emeritus in Indiana University, died recently at the age of eighty-five. He accepted the chair of natural philosophy and chemistry in Indiana University in 1837,

in 1852 became professor of mathematics in Miami University, but returned to his former position after three years. He was transferred to the chair of languages in 1864, and withdrew from active work in 1886.

THE presidency of the Columbian University of Washington has been offered to the Rev. B. L. Whitman, President of Colby University in Maine.

PROFESSOR ALEXANDER GRAHAM BELL has presented the Volta Bureau Library of Georgetown with the Scientific Library of the late Joseph Henry of the Smithsonian Institution, numbering 1,500 volumes.

AT Harvard University Mr. G. A. Dorsey has been appointed instructor in anthropology, Mr. V. A. Wright instructor in descriptive geometry and stereotomy, and Dr. Alfred Schafer demonstrator of histology and embryology.

PROF. VALENTINE BALL, Director of the Museum of Science and Art of Dublin, died on June 17th, at the age of 52 years. He was elected a fellow of the Geological Society of London in 1874, fellow of the Royal Society in 1882, president of the Royal Geological Society of Ireland in 1882, and was professor of geology and mineralogy in the University of Dublin from 1881 to 1883. He was the author of works on the geology of India, and accounts of explorations in Afghanistan, Beloochistan, the Himalayas, etc.

JOHNS HOPKINS UNIVERSITY has received two gifts in memory of Prof. George H. Williams. His friends have given an oil portrait of Mr. Williams, and Mrs. Williams a sum of money sufficient to establish a lectureship in geology. Sir Archibald Geikie, Director of the Geological Survey of Ireland, has been invited to be first lecturer.

J. J. HOGAN, mechanic and electrician in the Yale Psychological Laboratory, has invented a practicable device whereby the

high voltage city current is rendered readily available for low voltage instruments such as telegraph instruments, telephones, electric forks, bells, induction coils, etc. The General Electric Company has acquired patent rights. The details of the instrument will be made public as soon as the foreign patents are issued.

DR. H. W. WILLIAMS, a distinguished ophthalmological surgeon of Boston and author of several works on diseases of the eye, died at Boston on June 13th at the age of seventy-three years.

PROF. MICHAEL FOSTER has now prepared an abridgement of his classical text-book of physiology, which in the sixth edition of five volumes had reached a size too large for the needs of the medical student. The abridged edition is published by Macmillan & Co. in an octave volume of about 1000 pages.

MR. ERWIN F. SMITH, of the Agricultural Department, has become one of the associate editors of *The American Naturalist*, taking charge of the department of vegetable physiology.

MACMILLAN & Co. announce the third edition of *Graduate Courses*, edited by C. A. Duniway, Harvard Graduate Club, assisted by graduate students representing twenty leading American universities. The work gives the advanced courses of instruction to be offered for 1895-6 in Barnard, Brown, Bryn Mawr, California, Chicago, Clark, Columbia, Cornell, Harvard, Johns Hopkins, Michigan, Minnesota, Pennsylvania, Princeton, Radcliffe, Stanford, Vanderbilt, Western Reserve, Wisconsin and Yale. Much valuable information is included regarding the conditions of advanced work at these universities.

At the commencement of the University of Pennsylvania a bronze bust of the late Professor Joseph Leidy was presented by Dr. Harrison Allen:

SIR ARCHIBALD GEIKIE has been elected a corresponding member of the Vienna Academy of Sciences.

PROFESSOR SIMON NEWCOMB was elected on June 16th an associate academician of the Académie des Sciences to fill the vacancy caused by the death of von Helmholtz.

MRS. CORNELIA PHILLIPS SPENCER has received the degree of LL. D. from North Carolina State University.

At the summer meeting of the University Extension Society of Philadelphia, July 1-26, Courses in literature and history, psychology, music, biology, mathematics, civics and politics will be offered. The courses in science are as follows:

Psychology of the Normal Mind, by William Romaine Newbold, Ph. D., Penna.; Physiological Psychology of Adult and Child, by Lightner Witmer, Ph. D., Penna.; Hypnotic and Kindred Abnormal States of Mind, by William Romaine Newbold, Ph. D.; Anatomy and Physiology of the Nervous System, by Lightner Witmer, Ph. D.; Experimental Methods of Child Study, by Lightner Witmer, Ph. D.; Botany, by W. P. Wilson, Sc. D., Penna.; Systematic Botany, by J. M. Macfarlane, Sc. D., Penna.; Vertebrate Zoölogy, by Edward D. Cope, Ph. D., Penna.; Invertebrate Zoölogy, by J. S. Kingsley, S. D., Tufts; The Lower Plants, by Byron D. Halsted, Sc. D., Rutgers; Biology in Elementary Schools, by L. L. W. Wilson, Philadelphia Normal School; How Garden Varieties Originate, by L. H. Bailey, M. S., Cornell; Relation of Certain Plants to Political Economy, by George L. Goodale, LL. D., Harvard; The New Evolution, by Charles O. Whitman, Ph. D., Chicago; Higher Mathematics, Algebra, Modern Geometry, Etc., by Isaac J. Schwatt, Ph. D., Penna. /

THE first number of a series of *Princeton Contributions to Psychology* has been issued

from the University press, edited by J. Mark Baldwin and containing two articles reprinted from the *Psychological Review*: I. General Introduction—Psychology, past and present, by the editor; and II. Freedom and Psycho-genesis, by A. T. Ormond.

THE *Programme of the Department of Geology* of the University of Chicago for 1895-96 bears witness to the great strength of the department. Thirty-one courses are offered by the following officers of the department: Thomas C. Chamberlin, Head Professor of Geology; Rollin D. Salisbury, Professor of Geographic Geology; Joseph P. Iddings, Professor of Petrology; Richard A. F. Penrose, Jr., Professor of Economic Geology; William H. Holmes, Professor of Archaeology and Graphic Geology; Charles R. Van Hise, Non-resident Professor of Pre-Cambrian Geology; Oliver Cummings Farrington, Instructor in Determinative Mineralogy; Edmund C. Quereau, Tutor in Palæontologic Geology.

#### SOCIETIES AND ACADEMIES.

##### BIOLOGICAL SOCIETY OF WASHINGTON.

At the meeting of June 1st Dr. C. Hart Merriam presented a paper on the Short-tailed Shrews of North America, stating that an examination of many specimens showed that the described species were only four, *Blarina brevicauda*, *B. carolinensis*, *B. parva* and *B. Berlandieri*. He discussed these and their distribution at some length, saying that each species was characteristic of one of the zoölogical divisions of North America.

Dr. G. Brown Goode made some remarks on the Location and Record of Natural Phenomena by a Method of Reference to Geographical Coördinates.

Dr. Gill presented a communication on The Relations of the Ancient and Modern *Ceratodontidæ*.

He commented on the unusual degree of interest connected with the Ceratodontids.

The statement has been frequently made that *Ceratodus* is the oldest living generic type of fishes, and the identity of the living fishes so-called with the mesozoic species has been especially insisted on. The speaker, however, had denied such generic identity as early as 1878 on account of the difference in the form and plication of the dental plates, and had revived for the recent genus the name *Neoceratodus* given in mistake by Castelnau to a specimen of the genus. A new name, *Epiceratodus*, has recently been given by Teller to the same genus and must be abandoned. But Teller has given us useful data respecting the cranial characters of the mesozoic species, and we now have information sufficient at least to offer hints as to the relations of the ancient and modern forms. We can affirm positively that the recent Ceratodontids are very different from the mesozoic species; that consequently they should bear the name *Neoceratodus*, unless a still earlier one is applicable, and further that the differences between the living and long extinct species are enough to ever differentiate the two as distinct sub-families, the *Ceratodontinæ* including only extinct species and the *Neoceratodontinæ* being a recent type. The distinguishing characters of the two were given at length and derived from the dermal bones, the modification of the posterior region of the head, and the protrusion of the jaws. The ancient forms themselves belong to at least two genera: *Ceratodus*, typified by *C. Kaupii*, and *Anticeratodus*, typified by *C. Sturii*, of Teller. The latter is distinguished by the contiguity of the two palatine plates and their extended inner walls.

Professor Lester F. Ward exhibited specimens of the rhizomes of the Gama Grass, *Tripsacum dactyloides*, obtained at Great Falls, Md., on April 27th, which bore a striking resemblance to fossil forms described under the name of *Caulinites*, Brongn., and especially to *C. parisiensis*,